ISCR

Institute for Scientific Computing Research

Fiscal Year 2001 Annual Report

http://www.llnl.gov/casc/iscr/

Lawrence Livermore National Laboratory
P.O. Box 808, L-561, Livermore, CA 94551

CASC

Center for Applied Scientific Computing

UNIVERSITY RELATIONS PROGRAM

The University Relations Program (URP) encourages collaborative research between Lawrence Livermore National Laboratory (LLNL) and the University of California campuses. The Institute for Scientific Computing Research (ISCR) actively participates in such collaborative research, and this report details the Fiscal Year 2001 projects jointly served by URP and ISCR. For a full discussion of all URP projects in FY 2001, please request a copy of the URP FY 2001 Annual Report by contacting

Lawrence Livermore National Laboratory
Edie Rock, University Relations Program
P. O. Box 808, L-413
Livermore, CA 94551

UCRL-LR-133866-01

Work performed under the auspices of the U.S. Department of Energy by University of California Lawrence Livermore National Laboratory under Contract W-7405-ENG-48.

Contents

The Mission of the ISCR

The Institute for Scientific Computing Research (ISCR) at Lawrence Livermore National Laboratory is jointly administered by the Center for Applied Scientific Computing (CASC) and the University Relations Program (URP), and this joint relationship expresses its mission. An extensively externally networked ISCR cost-effectively expands the level and scope of national computational science expertise available to the laboratory through CASC. The URP, with its infrastructure for managing five institutes and numerous educational programs at LLNL, assumes much of the logistical burden that is unavoidable in bridging the laboratory's internal computational research environment with that of the academic community.

As large-scale simulations on the parallel platforms of DOE's Accelerated Strategic Computing Initiative become increasingly important to the overall mission of LLNL, the role of the ISCR expands in importance, accordingly.

Relying primarily on non-permanent staffing, the ISCR complements laboratory research in areas of the computer and information sciences that are needed at the frontier of laboratory missions. The ISCR strives to be the "eyes and ears" of the laboratory in the computer and information sciences, in keeping the laboratory aware of and connected to important external advances. It also attempts to be "feet and hands," in carrying those advances into the laboratory and incorporating them into practice. In addition to conducting research, the ISCR provides continuing education opportunities to laboratory personnel, in the form of on-site workshops taught by experts on novel software or hardware technologies.

The ISCR also seeks to influence the research community external to the laboratory to pursue laboratory-related interests and to train the workforce that will be required by the laboratory. Part of the performance of this function is interpreting to the external community appropriate (unclassified) aspects of the laboratory's own contributions to the computer and information sciences—contributions that its unique mission and unique resources give it a unique opportunity and responsibility to make.

Of the three principal means of packaging scientific ideas for transfer—people, papers, and software—experience suggests that the most effective means is people. The programs of the ISCR are therefore people-intensive.

Finally, the ISCR, together with CASC, confers an organizational identity on the burgeoning computer and information sciences research activity at LLNL and serves as a point of contact within the laboratory for computer and information scientists from outside.

Institute for Scientific Computing Research
Fiscal Year 2001 Director's Report

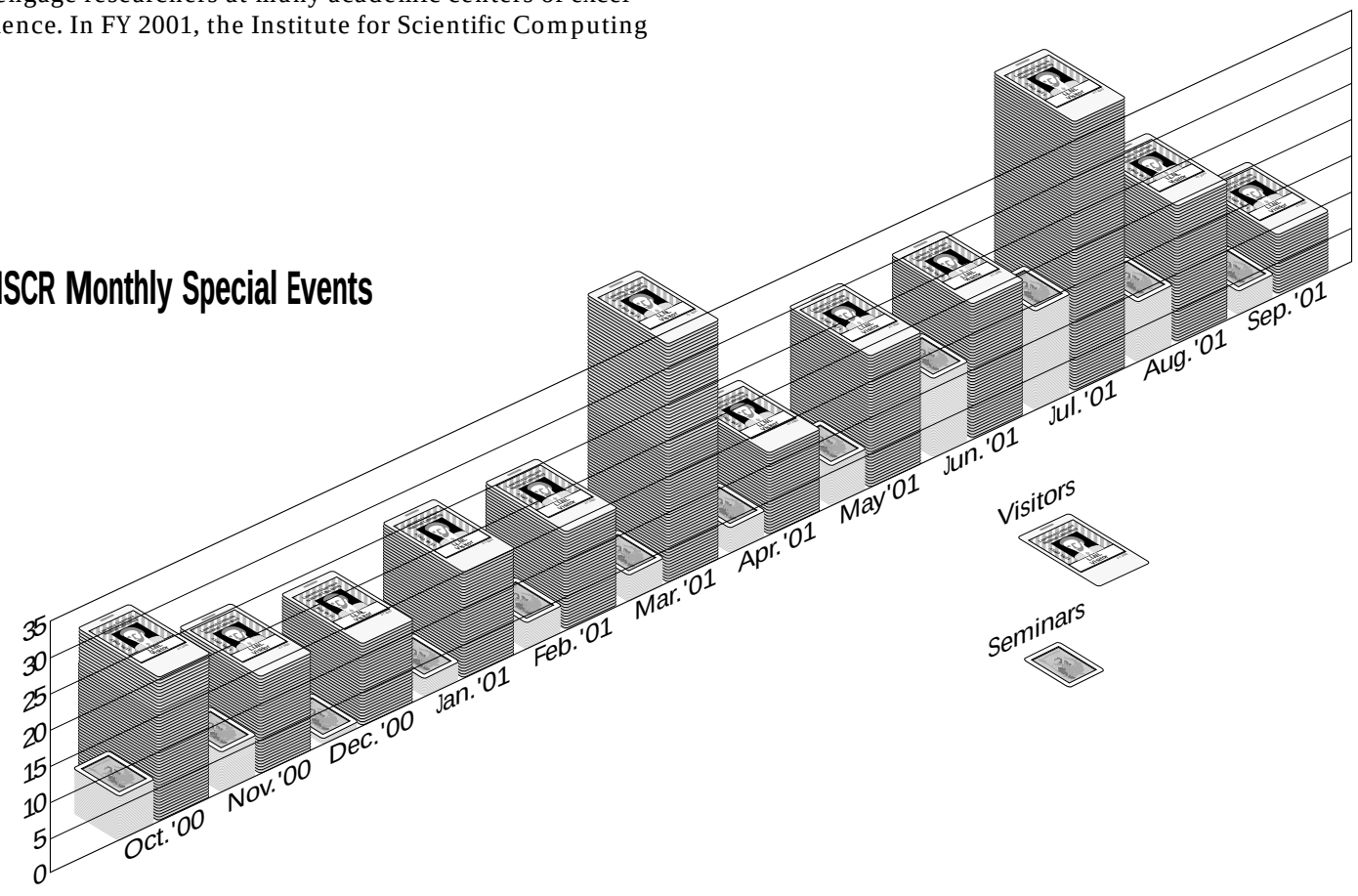
Large-scale scientific computation, and all of the disciplines that support it and help to validate it, have been placed at the focus of Lawrence Livermore National Laboratory by the Advanced Simulation and Computing (ASCI) program and more recently by DOE's Scientific Discovery through Advanced Computing (SciDAC) initiative. The Laboratory operates the computer with the highest peak performance in the world and has undertaken some of the largest and most compute-intensive simulations ever performed. Scientific simulation was the featured discipline at the Laboratory's 2001 public "Science Day" program. However, computers at architectural extremes are notoriously difficult to use efficiently. Furthermore, each successful terascale simulation only points out the need for much better ways of interacting with the resulting data.

Advances in scientific computing research have therefore never been more vital to the core missions of the Laboratory than at present. Computational science is evolving so rapidly along every one of its research fronts that to remain on the leading edge the Laboratory must engage researchers at many academic centers of excellence. In FY 2001, the Institute for Scientific Computing Research (ISCR) has served as one of the Laboratory's main bridges to the academic community in the form of collaborative subcontracts, visiting faculty, student internships, workshops, and an active seminar series.

ISCR research participants are integrated into the Laboratory's Center for Applied Scientific Computing (CASC), which, in turn, addresses computational challenges arising throughout the Laboratory. Administratively, the ISCR flourishes under the Laboratory's University Relations Program (URP). Together with the other four Institutes of the URP, it navigates a course that allows the Laboratory to benefit from academic exchanges while preserving national security. While it is difficult to operate an academic-like research enterprise within the context of a national security laboratory, the results declare the challenges well met and worth the continued effort.

Fiscal year 2001 was the second full year under Acting Director David Keyes. Keyes, the Richard F. Barry

ISCR Monthly Special Events



Professor of Mathematics & Statistics at Old Dominion University and an ISCR faculty participant since October 1997, dedicated one-third of his time to the technical program of the ISCR. Jill Dunaway continued as the full-time Institute Administrator. Terry Garrigan, Emma Horcabas, and Leslie Bills all assisted with the large visitor and summer program. With a reorganization of the Computation Directorate at LLNL in November 2001, Dunaway moved on to the administration of CASC, itself, and the ISCR is most delighted that Linda Bodtker has come on board as the new Administrator for FY02.

In FY 200l, we continued our Institute for Terascale Simulation Lecture Series, featuring visits from Ingrid Daubechies, David Johnson, Michael Norman, Charles Peskin, Eugene Spafford, and Andries Van Dam. A special section of this annual report is devoted to the abstracts and biosketches of these distinguished lecturers. The ITS Lectures typically draw two to three hundred people from around the Laboratory and surrounding scientific community. They are archived on video and available at the LLNL Technical Library. We plan to continue this series with approximately six "movers and shakers" in high-end simulation and its enabling technologies per year.

In February, the ISCR hosted the Bay Area Scientific Computing Day, an annual gathering designed to strengthen ties between scientific computing researchers throughout the Bay Area, featuring talks by students, post-docs, and senior researchers, and drawing 120 participants.

In a series of twelve lectures throughout the spring of 2001, sabbatical visitor Professor Omar Ghattas of Carnegie Mellon University, a leader in the field of optimization subject to large-scale constraints of partial differential equation type, gave a short course to approximately twenty regular attendees on optimization techniques in computational science.

In early April, the ISCR co-sponsored three international conferences held off-site with significant technical leadership from permanent CASC staff and ISCR affiliates, beginning with the annual Copper Mountain Conference, in Copper Mountain, Colorado. The 2001 meeting was devoted to Multigrid Methods. Four members of the CASC scientific staff presented papers, as did nineteen of the academic collaborators of the ISCR. Van Emden Henson of CASC presented a multigrid tutorial on the opening day.

The ISCR also continued its role in promoting scientific aspects of data mining, with co-sponsorship of the Third Workshop on Mining Scientific Data Sets. This one-day workshop was held in Chicago, in conjunction with a data mining workshop of larger scope, organized by the Society for Industrial and Applied Mathematics (SIAM).

In late April, the ISCR co-sponsored another international conference dedicated to Preconditioning Techniques for Large Sparse Matrix Problems in Industrial Applications in Tahoe City, California.

In June, with the advent of our large student summer program and sponsorship from the Defense Programs office of DOE HQ, we ramped up our second annual Internships in Terascale Simulation Technology tutorial series. The tutors included CASC's textbook authors, John May and Van Emden Henson, CASC computational mathematicians David Brown and Carol Woodward, CASC computer scientists Terence Critchlow and Gary Kumfert, three visiting faculty, and the ISCR Director. Though intended for students, permanent CASC researchers attended an occasional subseries of the lectures.

Also in June, under the direction of CASC scientists Jim Jones and Rob Falgout, the ISCR organized a three-day Workshop on Solution Methods for Large-scale Nonlinear Problems in Livermore.

In July, the ISCR organized in Livermore a three-day Workshop on Object-Oriented and Component Technology for Scientific Computing, under the direction of CASC scientists Scott Kohn and Gary Kumfert.

Throughout FY 2001, the ISCR brought to the laboratory a vigorous contingent of post-docs, faculty visitors, and students. There were 27 faculty visitors in residence for more than just a seminar visit – for a week to a semester. Eight post-docs made the ISCR their home this past year. We also had 44 students in residence, mostly for 8–10 weeks of the summer, but several of them for a semester or a full year. Each of these students was in a research relationship with one of CASC's approximately ninety full-time technical staff.

The pages of this report summarize the activities of the faculty members, post-doctoral researchers, students, and guests from industry and other laboratories who participated in LLNL's computational mission under the auspices of the ISCR during FY 2001. Altogether, the ISCR hosted 223 visits from 182 different visitors, who gave a

total of 73 seminars on site. The vast majority of the visitors were from academia, with 15% from industry and 15% from other laboratories. Visitors from outside of the United States made up 10% of the total. The histogram on page 4 charts the numbers of visitors and seminars as a function of the month of the fiscal year.

Most of the material of this annual report comes directly from the visitors and principal investigators of the projects being reported, who selected formats convenient for their purposes. We thank Whitney Lacy for her editorial work and Dan Moore of the Technical Information Division of LLNL for his graphic artistry in producing an easily navigated and visually pleasing document.

We hope that you enjoy examining this report on the ISCR's diverse activities in FY 2001. For further information about the Institute, please contact us at the address below. Inquiries about how you might enhance the on-going FY 2002 program at the ISCR, or beyond, are welcome.

David Keyes

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ISCR Fiscal Year 2001 in Review

FY 2001 Seminar Series (in reverse chronological order)

Mark Mitchell, CodeSourcery, LLC (Seminar) ..... September 28, 2001
Don Schwendeman, Rensselaer Polytechnic Institute ..... September 24-28, 2001
Sutanu Sarkar, University of California, Davis (Seminar) ..... September 26-27, 2001
Ken Joy, University of California, Davis ..... September 24-26, 2001
James Kuo, Livermore Software Technology Corporation ..... September 21, 2001
Gerhard Starke, University of Hannover ..... September 10 & 14, 2001
Doug Swesty, State University of New York, Stony Brook ..... September 5 & 7, 2001
Ken Joy, University of California, Davis ..... September 4-7, 2001
Preethy Vaidyanathan, University of California, Santa Cruz ..... September 6, 2001
Gerhard Wellein, University of Erlangen-Nuernberg (Seminar) ..... September 6, 2001
Irad Yavneh, Technion-Israel Institute of Technology (Seminar) ..... September 1, 2001
Steven Reinhardt, University of Michigan (Seminar) ..... August 31, 2001
Johannes Kraus, University of Leoben (Seminar) ..... August 31, 2001
Tim Chartier, University of Washington ..... August 30, 2001
Michael Gertz, University of California, Davis ..... August 30, 2001
Ken Joy, University of California, Davis ..... August 27-30, 2001
Peter Arbenz, Swiss Federal Institue of Technology (Seminar) ..... August 28, 2001
Tamara Munzner, Compaq Systems Research Center (Seminar) ..... August 24, 2001
Tom Manteuffel, University of Colorado ..... August 22-24, 2001
Steve McCormick, University of Colorado ..... August 22-24, 2001
Brent Lindquist, State University of New York (Seminar) ..... August 21-23, 2001
Philip Roe, University of Michigan (Seminar) ..... August 21-22, 2001
Todd Kermit, Zephyr-TEC ..... August 21, 2001
Linda Petzold, University of California, Santa Barbara ..... August 13-17, 2001
Sergey Kirshner, University of California, Irvine ..... August 16, 2001
Kim Yates, ET International ..... August 16, 2001
Dan Cacuci, University of California, Berkeley ..... August 15, 2001
Paul Hovland, Argonne National Laboratory ..... August 15, 2001
Levanto Schachter, University of California, Davis (Seminar) ..... August 13, 2001
Sharad Mehrotra, University of California, Irvine (Seminar) ..... August 10, 2001
Michael Mascagni, Florida State University (Seminar) ..... August 8-10, 2001
Andrew Knyazev, University of Colorado, Denver ..... August 2-3, 2001
Jesus Labarta, European Center for Parallelism of Barcelona (Seminar) ..... July 27, 2001
Frederick Wong, University of California, Berkeley ..... July 27, 2001
David Caliga, SRC Computers, Inc. (Seminar) ..... July 25 & 27, 2001
Alan Sussman, University of Maryland, (Seminar) ..... July 25-26, 2001
Jens Schmidt, University of Colorado, Boulder ..... July 23-27, 2001
Thomas Russell, University of Colorado, Denver (Seminar) ..... July 23-24, 2001
Mark Bolas, Fakespace Labs, Inc. ..... July 20, 2001
Daniel Carr, Fakespace Labs, Inc. ..... July 20, 2001
Ian McDowell, Fakespace Labs, Inc. ..... July 20, 2001

Patrick Worley, Oak Ridge National Laboratory (Seminar) .....July 19-20, 2001
Jeff Hollingsworth, University of Maryland, College Park July19, 2001
Randal Burns, IBM Almaden Research Center (Seminar) .....July 18, 2001
Jessica Masters, University of California, Santa Cruz .....July 17, 2001
Cal Ribbens, Virginia Polytechnic Institute .....July 16-26, 2001
Robert Ansell-Bell, University of Oregon .....July 16-17, 2001
Ignacio Llorente, Complutense University (Seminar) .....July 16-17, 2001
Allen Malony, University of Oregon (Seminar) .....July 16-17, 2001
Byung Lee, University of Vermont .....July 15-18, 2001
Alex Pothen, Old Dominion University .....July 13-23, 2001
Arthur Kordon, Dow Chemical Company (Seminar) .....July 13, 2001
Michelle Hribar, Pacific University (Seminar) .....July 12, 2001
Rossen Dimitrov, MPI Software Technologies Inc. .....July 9-10, 2001
David Leimbach, MPI Software Technologies Inc. .....July 9-10, 2001
Anthony Skjellum, MPI Software Technologies Inc. .....July 9-10, 2001
James O'Brien, University of California, Berkeley (Seminar) .....July 9, 2001
Daniel Boley, University of Minnesota (Seminar) .....July 6, 2001
Omar Ghattas, Carnegie Mellon University (Seminar) .....July 2, 2001
Anne Greenbaum, University of Washington (Seminar) .....June 25-July 20, 2001
Tim Kelley, North Carolina State University .....June 25-26, 2001
Randall LeVeque, University of Washington (Seminar), ...June 25-26, 2001
Bernd Hamann, University of California, Davis .....June 22, 2001
Pat Hanrahan, Stanford University .....June 22, 2001
Michael Holst, University of California, San Diego .....June 22, 2001
Klaus Stueben, GMD-Forschungszentrum Informationstechnik GmbH .....June 5-20, 2001
Eric Lum, University of California, Davis .....June 19, 2001
Eric Shaffer, University of Illinois, Urbana-Champaign (Seminar) ..... June 19, 2001
Kyle Gallivan, Florida State University .....June 2-18, 2001
Achi Brandt, Weizmann Institute of Science (Seminar) .....June 14-15, 2001
Kees Oosterlee, German National Research Laboratory (Seminar) .....June 11-15, 2001
Luiz De Rose, IBM TJ Watson Research Center (Seminar) .....June 12-14, 2001
Phillip Gibbons, Bell Labs (Seminar) .....June 8, 2001
Heinz Otto Kreiss, University of California, Los Angeles .....May 31-June 7, 2001
Jeff Gibson, Stanford University (Seminar) .....June 6, 2001
Martin Schulz, Technical University of Munich (Seminar) .....June 4, 2001
Nancy Tran, University of Illinois, Urbana-Champaign (Seminar) .....June 4, 2001
Jarek Rossignac, Georgia Institute of Technology (Seminar) .....May 31, 2001
Jack Snoeyink, University of North Carolina, Chapel Hill (Seminar) .....May 31, 2001
Richard Strelitz, Los Alamos National Laboratory .....May 31, 2001
Kwai Lam Wong, University of Tennessee, Knoxville .....May 30-31, 2001
Michael Minion, University of North Carolina (Seminar), ...May 22, 2001
Gregory Miller, University of California, Davis .....May 18, 2001
Rolf Rabenseifner, University of Stuttgart (Seminar).....May 17-18, 2001
Marian Brezina, University of Colorado .....May 14-18, 2001
Timothy Campbell, University of Arizona .....May 16, 2001

Philip Colella, Lawrence Berkeley National Laboratory (Seminar) ..... May 16, 2001
Homer Walker, Worcester Polytechnic Institute ..... May 14-16, 2001
Richard Barrett, Los Alamos National Laboratory (Seminar) ..... May 15, 2001
Rajeev Rastogi, Bell Labs ..... May 11, 2001
Stefan Lang, University of Heidelberg (Seminar) ..... May 9, 2001
Sandra Nagele, University of Heidelberg (Seminar) ..... May 9, 2001
Achim Gordner, University of Heidelberg (Seminar) ..... May 8, 2001
Gabriel Wittum, University of Heidelberg (Seminar) ..... May 8, 2001
Said Elghobashi, University of California, Irvine (Seminar) ..... May 4, 2001
Martin Bertram, University of Utah ..... April 30-May 3, 2001
Charles Hansen, University of Utah ..... May 3, 2001
Owe Axelsson, University of Nijmegen (Seminar) ..... April 15-May 2, 2001
David Lowenthal, University of Georgia (Seminar) ..... April 27, 2001
Doug Swesty, State University of New York, Stony Brook (Seminar) ..... April 26-27, 2001
Alex Pothen, Old Dominion University ..... April 24, 2001
Tanya Vassilevska, Texas A&M University ..... April 17-23, 2001
David Butler, Limit Point Systems ..... April 13, 2001
Martin Bertram, University of Utah ..... April 10-15, 2001
Boris Diskin, ICASE, NASA Langley (Seminar) ..... April 9-11, 2001
Oleg Diyankov, STRELA Open Computer Center (Seminar) ..... April 9, 2001
Yuriko Renardy, Virginia Polytechnic Institute (Seminar) ..... April 9, 2001
Sanith Wijesinghe, Massachusetts Institute of Technology ..... March 19-April 6, 2001
Kyle Gallivan, Florida State University ..... March 29-30, 2001
Yousuff Hussaini, Florida State University ..... March 29-30, 2001
Martin Bertram, University of Utah ..... March 20-25, 2001
Aleksander Slominski, Indiana University ..... March 21-24, 2001
Randall Bramley, Indiana University ..... March 22, 2001
Byung Lee, University of Vermont ..... March 18-22, 2001
Bertil Gustafsson, Stanford University (Seminar) ..... March 20, 2001
Steve McCormick, University of Colorado ..... March 14-20, 2001
Timo Bremer, University of California, Davis ..... March 19, 2001
Bernd Hamann, University of California, Davis ..... March 19, 2001
Tanya Vassilevska, Texas A&M University ..... March 8-18, 2001
Ken Joy, University of California, Davis ..... March 16, 2001
Oscar Bruno, California Institute of Technology (Seminar) ..... March 14, 2001
McKay Hyde, California Institute of Technology ..... March 14, 2001
Michael McCracken, Penn State University ..... March 6, 2001
Andrew Knyazev, University of Colorado, Denver (Seminar) ..... February 25-March 3, 2001
Bryan Biegel, NASA Ames Research Center ..... March 2, 2001
William Van Dalsem, NASA Ames Research Center ..... March 2, 2001
David Ellsworth, NASA Ames Research Center ..... March 2, 2001
William Feiereisen, NASA Ames Research Center ..... March 2, 2001
Bryan Green, NASA Ames Research Center ..... March 2, 2001
Christopher Henze, NASA Ames Research Center ..... March 2, 2001
Darold Massaro, NASA Ames Research Center ..... March 2, 2001

Patrick Moran, NASA Ames Research Center .....March 2, 2001
Scott Richardson, NASA Ames Research Center .....March 2, 2001
Guy Russell, NASA Ames Research Center .....March 2, 2001
Velvin Watson, NASA Ames Research Center .....March 2, 2001
Eugene Tu, NASA Ames Research Center .....March 2, 2001
Lori Freitag, Argonne National Laboratory .....February 28, 2001
Eric de Sturler, IBM TJ Watson Research Center .....February 26-28, 2001
Padhraic Smyth, University of California, Irvine .....February 22, 2001
Esmond Ng, Lawrence Berkeley National Laboratory. .....February 21, 2001
Rajesh Rawat, University of Utah .....February 20-21, 2001
Paul Saylor, University of Illinois, Urbana-Champaign .....February 16, 2001
John Harer, Duke University (Seminar) .....February 16, 2001
Doug Swesty, State University of New York at Stony Brook .....February 15-16, 2001
Martin Bertram, University of Utah .....February 13-23, 2001
Donald Estep, Colorado State University (Seminar) .....February 9, 2001
Tom Manteuffel, University of Colorado .....February 5-9, 2001
Justin Koo, University of Michigan .....February 2, 2001
Paul Hovland, Argonne National Laboratory .....January 31, 2001
David Bailey, Lawrence Berkeley National Laboratory .....January 25, 2001
Robert Lucas, Lawrence Berkeley National Laboratory .....January 25, 2001
Gregory Miller, University of California, Davis .....January 19, 2001
Travis Austin, University of Colorado .....January 8-19, 2001
Steve McCormick, University of Colorado .....January 6-12, 2001
Stanimire Tomov, Texas A&M University .....January 3-12, 2001
Benjamin Keen, University of Michigan .....January 11, 2001
Eduardo D'Azevedo, Oak Ridge National Laboratory .....January 5, 2001
Esmond Ng, Lawrence Berkeley National Laboratory .....January 5, 2001
James Glimm, State University of New York, Stony Brook .....January 5, 2001
Erin Parker, University of North Carolina, Chapel Hill (Seminar) .....January 5, 2001
Mark Shephard, Rensselaer Polytechnic Research Center .....January 5, 2001
Calvin Lin, University of Texas, Austin (Seminar) .....January 4, 2001
Sally McKee, University of Utah .....December 13-15, 2000
Angela Shiflet, Wofford College .....December 14, 2000
Dana Knoll, Los Alamos National Laboratory .....December 13-14, 2000
Henry Tufo, Argonne National Laboratory .....December 4-14, 2000
Charles Breckenridge, SRC Computers, Inc. .....December 13, 2000
David Caliga, SRC Computers, Inc. .....December 13, 2000
Greg Fenner, SRC Computers, Inc. .....December 13, 2000
Michael Henesy, SRC Computers, Inc. .....December 13, 2000
Jon Huppenthal, SRC Computers, Inc. .....December 13, 2000
Daniel Poznanovic, SRC Computers, Inc. .....December 13, 2000
Ken Joy, University of California, Davis .....December 7, 2000
Robert Krasny, University of Michigan (Seminar) .....November 30-December 1, 2000
Tim Chartier, University of Colorado .....November 29-December 1, 2000
Ulrich Ruede, University of Erlangen (Seminar) .....November 2-30, 2000

Dawson Engler, Stanford University (Seminar) .....November 28, 2000
Matthew Gleeson, MPI Software Technologies Inc. .....November 20, 2000
Robert Sharpley, University of South Carolina .....November 17, 2000
Scott Johnson, University of South Carolina .....November 17, 2000
Peter Gottschling, GMD First (Seminar) .....November 16, 2000
Heinz Kreiss, University of California, Los Angeles .....November 13, 2000
Scott Gaffney, University of California, Irvine .....November 3, 2000
Padhraic Smyth, University of California, Irvine .....November 3, 2000
Christoph Pflaum, University of Wurzburg (Seminar).....October 24, 2000
Sanith Wijesinghe, Massachusetts Institute of Technology.....October 9-20, 2000
John Lyon, Dartmouth College .....October 17-20, 2000
Michael Wiltberger, Dartmouth College .....October 17-20, 2000
Raytcho Lazarov, Texas A & M University .....October 19, 2000
Stanimire Tomov, Texas A & M University .....October 19, 2000
Luis Silva, University of California, Los Angeles .....October 19, 2000
Ricardo Fonseca, University of California, Los Angeles (Seminar) ..... October 19, 2000
Warren Mori, University of California, Los Angeles .....October 19, 2000
Juan Alonso, Stanford University (Seminar) .....October 18, 2000
Antony Jameson, Stanford University (Seminar) .....October 18, 2000
William Bosl, Stanford University .....October 16, 2000
Erland Arge, Numerical Objects AS .....October 16, 2000
Are Magnus Bruaset, Numerical Objects AS (Seminar) .....October 16, 2000
Steve McCormick, University of Colorado .....October 4-6, 2000
Victor Barocas, University of Minnesota (Seminar) .....October 4-6, 2000
Klaus Stueben, GMD-Forschungszentrum Informationstechnik GmbH.....September 28-October 2, 2000

FY 2001 Institute for Terascale Simulation Lecture Series (in reverse chronological order)

Charles Peskin, Courant Institute of Mathematical Sciences (Seminar).....July 11, 2001
Eugene H. Spafford, Purdue University (Seminar) .....May 9, 2001
Michael Norman, University of California, San Diego (Seminar) .....March 28, 2001
Ingrid Daubechies, Princeton University (Seminar) .....January 24, 2001
David Johnson, AT&T (Seminar) .....November 15, 2000

Visiting Faculty, Guests, Consultants, and Researchers

Visiting and Collaborating Professors

Fernando Arias de Saavedra, University of Spain
Owe Axelsson, University of Niimegen
Randy Bank, University of California, San Diego
Martin Bertram, University of Utah
Marian Brezina, University of Colorado
Xiao-Chuan Cai, University of Colorado
Zhiqiang Cai, Purdue University

Visiting and Collaborating Professors (continued)

Alejandro Garcia, San Jose State University
Omar Ghattas, Carnegie Mellon University
Anne Greenbaum, University of Washington
Michael Holst, University of California, San Diego
Kenneth Joy, University of California, Davis
Johannes Kraus, Austrian Science Foundation
Raytcho Lazarov, Texas A&M University
Tara Madhyastha, University of California, Santa Cruz
Leszek Marcinkowski, University of Colorado
Sally McKee, University of Utah
Michael Minion, University of North Carolina
Joseph Pasciak, Texas A&M University
Francesco Pederiva, University of Trento, Italy
Christoph Pflaum, Technical University
John Ruge, Front Range Scientific Computing
Don Schwendeman, Rensselaer Polytechnic Institute
Klaus Stueben, GMD-Forschungszentrum Informations technik GmbH
Tonya Vassilevska, Bulgarian Academy of Sciences
Gabriel Wittum, Kiel University
Irad Yahneh, Technion Israel Institute of Technology
Jacob Ystrom, Royal Institute of Technology

Participating Guests

Fernando Arias de Saavedra, University of Spain
Marsha Berger, New York University
William Bosl, Stanford University
Marian Brezina, University of Colorado
George Byrne, Illinios Institute of Technology
Richard Cook, Univeristy of California, Davis
Roger Crawfis, Ohio State University
Eric de Sturler, University of Illinois
David Dean, University of Colorado
John Fitzgerald, Lawrence Livermore National Laboratory (retired)
Sharon Frazier, Lawrence Livermore National Laboratory (retired)
Kyle Gallivan, Florida State University
Alejandro Garcia, San Jose State University
Michael Gertz, University of California, Davis
Michael Griebel, University of Bonn
Bernd Hamann, University of California, Davis
Ulf Hannebutte, Intel Corportation
Kenneth Joy, University of California, Davis
Johannes Kraus, Univesity of Leoben
Raytcho Lazarov, Texas A&M University

Byung Lee, University of Vermont
Ida Lozares, Lawrence Livermore National Laboratory (retired)
Kwan-Liu Ma, University of California, Davis
Michael Minion, University of North Caralina
Frank Mueller, North Carolina State Univesity
Beth Ong, Lawrence Livermore National Laboratory (retired)
Joseph Pasciak, Texas A&M University
Michael Pernice, University of Utah
Elbridge Gerry Puckett, University of California, Davis
John Rice, University of California, Berkeley
Ulrich Ruede, University of Erlangen
Yousef Saad, University of Minnesota
Paul Saylor, University of Illinois
Daniel Schikore, Computational Engineering, International
Gregory Schussman, University of California, Davis
Rob van der Wijngaart, NASA Ames Research Center
Tonya Vassilevska, Bulgarian Academy of Sciences
Gabreil Wittum, Kiel University
Donald Wolitizer, California State University, Hayward
Jacob Ystrom, Royal Institute of Technology
Ludmil Zikatanov, Penn State University

Consultants

Bernie Alder, University of California (Professor Emeritus)
Randolph Bank, University of California, San Diego
Leo Breiman, University of California, Berkeley
Nancy Collins, University of Colorado, Boulder
Gene Golub, Stanford University
Anne Greenbaum, University of Washington
Charles Hansen, University of Utah
Michael Holst, University of California, San Diego
David Keyes, Old Dominion University
Heinz-Otto Kriess, University of California, Los Angeles
Luc Machiels, Swiss Federal Institute of Technology
Thomas Manteuffel, University of Colorado, Boulder
Stephen McCormick, University of Colorado, Boulder
Gregory Miller, University of California, Davis
Linda Petzold, Univerity of California, Santa Barbara
Steve Schaffer, New Mexico Tech
Homer Walker, Worcester Polytechnic Institute

Department of Applied Science Faculty

Nelson Max
Garry Rodrigue

Postdoctoral Researchers

Robert Anderson
Erick Cantu-Paz
Paul Castillo
Leonardo Colletti
Miguel Dumett
Petri Fast
Jean-Luc Fattebert
Jeff Hittinger
David Hysom
Bobby Philip
Markus Schordan
Leonid Tsap

University Collaborative Research Program Faculty and Students

Darrell Long and Zachary Peterson, University of California, Santa Cruz
B. S. Manjunath and Jelena Teslic, University of California, Santa Barbara
Linda Petzold and Yang Cao, University of California, Santa Barbara
Sutanu Sarkar, David Lopez, and Carlos Pantano, University of California, San Diego
Padhraic Smyth and Scott Gaffney, University of California, Irvine
Mark van der Laan and Annette Molinaro-Clark, University of California, Berkeley

LDRD Project Investigators

Bronis de Supinski, LLNL, Center for Applied Scientific Computing
Mark Duchaineau, LLNL, Center for Applied Scientific Computing
Chandrika Kamath, LLNL, Center for Applied Scientific Computing

Students

Student Guests

Nathan Crane, University of Illinois
Matt Giamporcaro, Boston University
Charles Hindman, University of Colorado
Jason Hunt, University of Michigan
McKay Hyde, California Institute of Technology
David Hysom, Old Dominion University
Ty Jones, Univerity of Nevada, Reno
Lars Karlsson, Chalmers University of Technology
Michael King, University of Utah
Justin Koo, University of Michigan, Ann Arbor

Falko Kuester, University of California, Davis
John Lai, University of California, Davis
Tushar Mohan, University of Utah
Sandra Naegele, University of Heidelberg
Diem Phuong Nguyen, University of Utah
Stefan Nilsson, Chalmers Institute of Techology
Christopher Oehmen, University of Tennessee
Erin Parker, University of North Carolina
Pete Poulos, University of Utah
Jonathan Rochez, University of California, Davis
Preethy Vaidyanath, University of California, Santa Cruz
Wing Yee, University of Utah

Department of Applied Science Students

Paul Covello
Ben Gregorski
Aaron Herrnstein
Ana Iontcheva
Joseph Koning
Daniel Laney
Tim Pierce
Jonathan Rochez
Robert Rieben
Bahrad Sokhansanj
Jay Thomas

ISCR Students

Cheryl Barkauskas, Washington University
Rita Borgo, University of Pisa, Italy
Timo Bremer, University of California, Davis
Oliver Broeker, Swiss Federal Institute of Technology
Gyu Sang Choi, Penn State University
Tom Dossa, Santa Clara University
Achim Gordner, University of Heidelberg
Chaz Hales, Brigham Young University
Rachel Knop, West Point
Tzanio Kolev, Texas A&M University
Markus Kowarschik, University of Erlangen
Stefan Lang, University of Heidelberg
Michael McCracken, Penn State University
Kathleen Metz, Las Positas College
Deanna Midtaune, University of Pacific
Moon Gyu Park, Purdue University
Serban Porumbescu, University of California, Davis
Joshua Senecal, University of California, Davis

ISCR Students (continued)

Stanimire Tomov, Texas A&M University
Nicolas Valette, Texas A&M University
Serge van Criekingen, Norhtwestern University
Sanith Wijesinghe, Massachusetts Institute of Technology
Yihao Zheng, University of California, Davis

ITST Students

Lucas Ackerman, Worcester Polytechnic
Ryan Avecilla, University of Illinois
Janine Bennett, University of California, Davis
David Buttler, Georgia Tech
Todd Coffey, North Carolina State University
Kree Cole-McLaughlin, University of Utah
Paul Dostert, Texas A&M University
Michael Flanagan, Texas A&M University
David Hysom, Old Dominion University
Diana Jackson, Wofford College
David Littau, University of Minnesota
Luke Olsen, University of Colorado
Min Shin, University of South Florida

National Physical Science Consortium (NPSC) Students

Rachel Karchin, University of California, Santa Cruz
Imelda Kirby, University of Washington
Megan Thomas, University of California, Berkeley

Workshops and Conferences

Bay Area Scientific Computing Day, LLNL, February 2001
Mining Scientific Datasets, Chicago, Illinois, April 2001
Copper Mountain Conference, Copper Mountain, CO, April 2001
Preconditioning 2001, Tahoe City, CA, April 2001
Linear Solvers Workshop, Livermore, CA, June 2001
Common Component Architecture (CCA) Workshop, Livermore, CA, July 2001
Sensitivity Workshop, Livermore, CA, August 2001